Abstracts

Full Wave Modeling of Conducting Posts in Rectangular Waveguides and its Applications to Slot Coupled Combline Filters

H.-W. Yao, K.A. Zaki, A.E. Atia and R. Hershtig. "Full Wave Modeling of Conducting Posts in Rectangular Waveguides and its Applications to Slot Coupled Combline Filters." 1995 Transactions on Microwave Theory and Techniques 43.12 (Dec. 1995, Part II [T-MTT] (1995 Symposium Issue)): 2823-2829.

A full wave model of conducting posts in rectangular waveguides yielding their generalized S-matrix is presented. By cascading the generalized scattering matrices of the posts and waveguide discontinuities, slot couplings between two combline resonators are obtained. The validation and accuracy of the method are confirmed by comparing the numerical results with measured data. It is shown that both electric and magnetic couplings can be obtained by changing the slot positions, and the electric coupling is more sensitive to the tuning screw than magnetic coupling, A 6-pole slot coupled combline filter with asymmetrical transmission zeros is designed and built. Excellent filter responses are obtained.

❑ Return to main document.